Amend The Claims As Follows:

1. (Amended) A method of detecting an analyte in a sample, which method comprises the steps of:

(a) contacting the sample with an oligo- or polynucleotide comprising at least one compound selected from the group consisting of :

(i) a nucleotide having the [general] formula P-S-B-Sig wherein

P is [the] a phosphoric acid moiety,

S [the] is a sugar [or monosaccharide] moiety,

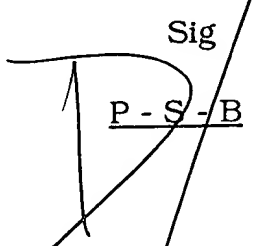
B [being the base] is a pyrimidine, purine or 7-deazapurine moiety, [the phosphoric acid moiety], and

Sig is a moiety which is detectable when the oligo- or polynucleotide is incorporated into a double-stranded ribonucleic or deoxyribonucleic acid duplex and which is attached to the nucleotide directly or through a linkage group which does not interfere substantially with the characteristic ability of Sig to form a detectable signal,

P is [being] attached at the 3' [and/] or the 5' position of [the sugar moiety] S when said nucleotide is a deoxyribonucleotide and at the 2', 3' [and/] or 5' position when said nucleotide is a ribonucleotide, [said base being a purine or a pyrimidine, said base] B is [being] attached to the 1' position of S from the N1 position when B is a pyrimidine or the N9 position [to the 1' position of the sugar moiety] when [said base] B is a [pyrimidine

or a] purine or a 7-deazapurine, [respectively,] and [wherein said] Sig is [a chemical moiety] covalently attached to [the base] B at a position other than the C5 position when B is a pyrimidine, at a position other than the C8 position when B is a purine and at a position other than the C7 position when B is a 7-deazapurine [of said nucleotide, said Sig when attached to said base B being capable of signalling itself or makes itself self-detecting or its presence known.];

(ii) a ribonucleotide having the formula,



wherein

P is a phosphoric acid moiety,

S is a sugar moiety,

B is a pyrimidine, purine or 7-deazapurine moiety, and

Sig is a moiety which is detectable when the oligo- or polynucleotide is incorporated into a double-stranded ribonucleic or deoxyribonucleic acid duplex and which is attached to the nucleotide directly or through a linkage group which does not interfere substantially with the characteristic ability of Sig to form a detectable signal,

P is attached at the 2', 3' or 5' position of S, B is attached to the 1' position of S from the N1 position when B is a pyrimidine or the N9 position when B is

a purine or a 7-deazapurine; and Sig is covalently attached to S; and

(iii) a nucleotide having the formula,

Sig

P - S - B

wherein

P is a phosphoric acid moiety,

S is a sugar moiety,

B is a pyrimidine, purine or 7-deazapurine moiety, and

Sig is a moiety which is detectable when the oligo- or polynucleotide is incorporated into a double-stranded ribonucleic or deoxyribonucleic acid duplex and which is attached to the nucleotide directly or through a linkage group which does not interfere substantially with the characteristic ability of Sig to form a detectable signal,

P is attached to the 3' or the 5' position of S when said nucleotide is a deoxyribonucleotide and at the 2', 3' or 5' position when said nucleotide is a ribonucleotide, B is attached to the 1' position of S from the N1 position when B is a pyrimidine or the N9 position when B is a purine, and Sig is covalently attached via the chemical linkage

OH
- P - O - Sig,
O

and

(b) detecting the presence of any of the oligo- or polynucleotides which have bound to said analyte.

Add The Following New Claims:

204. The method of Claim 1 wherein Sig is a moiety containing at least three carbon atoms.

205. The method of Claim 1 wherein Sig is a monosaccharide, polysaccharide or oligosaccharide.

206. The method of Claim 1 wherein Sig comprises a component selected from the group consisting of biotin or iminobiotin, an electron dense component, a magnetic component, an enzyme, a hormone component, a radioactive component, a metal-containing component, a fluorescent component, an antigen, hapten or antibody component and a chemiluminescent component.

207. The method of Claim 206 wherein the electron dense component is ferritin.

208. The method of Claim 1 wherein Sig is a sugar residue and the sugar residue is complexed with or attached to sugar or polysaccharide binding protein.

209. The method of Claim 208 wherein the protein is a lectin.

210. The method of Claim 209 wherein the lectin is Concanavalin A.

211. The method of Claim 209 wherein the lectin is conjugated to ferritin.

212. The method of Claim 210 wherein Sig comprises a chemiluminescent component.

213. The method of Claim 206 wherein Sig comprises a radioactive isotope.

214. The method of Claim 206 wherein Sig comprises an enzyme.

215. The method of Claim 214 wherein the enzyme is selected from the group consisting of alkaline phosphatase, acid phosphatase, B-galactosidase, ribonuclease, glucose oxidase and peroxidase.

216. The method of Claim 206 wherein Sig comprises a fluorescent component.

217. The method of Claim 216 wherein the fluorescent component is selected from the group consisting of fluorescein, rhodamine and dansyl.

B3, cont'd

218. The method of Claim 206 wherein Sig comprises a magnetic component.

219. The method of Claim 206 wherein Sig comprises an antigenic or hapten component capable of complexing with an antibody specific to the component.

220. The method of Claim 206 wherein Sig comprises a catalytic metal-containing component.

221. The method of Claim 1 wherein the oligo- or polynucleotide is terminally ligated or attached to a polypeptide.

222. The method of Claim 1 wherein the contacting further comprises contacting the sample with a polypeptide capable of forming a complex with Sig and a moiety which can be detected when the complex is formed.

223. The method of Claim 222 wherein the polypeptide comprises a polylysine.

224. The method of Claim 222 wherein the polypeptide comprises at least one avidin, streptavidin, or anti-Sig immunoglobulin.

225. The method of Claim 222 wherein Sig is a ligand and the polypeptide is an antibody thereto.

226. The method of Claim 222 wherein the detectable moiety is selected from the group consisting of biotin or iminobiotin, an electron dense component, a magnetic component, an enzyme, a hormone component, a radioactive component, a metal-containing component, a fluorescent component, an antigen, hapten or antibody component and a chemiluminescent component.

227. The method of Claim 1 wherein the target is a nucleic acid sequence derived from a living organism.

B3 cont'd

228. The method of Claim 227 wherein the living organism is selected from the group consisting of prokaryotes and eukaryotes.

229. The method of Claim 1 wherein the sample is suspected of containing an etiological agent and the target nucleic acid sequence is naturally associated with the etiological agent.

230. The method of Claim 229 wherein the sample is of human or animal origin and the etiological agent is selected from the group consisting of bacteria, viruses and fungi.

231. The method of Claim 1 wherein the sample comprises a bacterium suspected of containing a target nucleic acid sequence which imparts resistance to an antibiotic wherein the compound of claim 1 comprises a polynucleotide complementary to the sequence of the bacterium which confers resistance to the antibiotic.

232. The method of Claim 231 wherein the bacterium is *Streptococcus pyogenes* or *Neisseria meningitidis* and the antibiotic is penicillin.

233. The method of Claim 231 wherein the bacterium is *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Streptococcus*

pyogenes, or *Neisseria gonorrhoeae* and the antibiotic is a tetracycline.

234. The method of Claim 231 wherein the bacterium is *Mycobacterium tuberculosis* and the antibiotic is an aminoglycoside.

235 The method of Claim 1 wherein the sample is suspected of containing a target nucleic acid sequence associated with a genetic disorder and wherein the compound of claim 1 comprises a polynucleotide complementary to the sequence associated with the genetic disorder.

B3 cont'd

236. The method of Claim 1 wherein the sample is suspected of containing a target nucleic acid sequence associated with thalassemia and wherein the compound of claim 1 comprises a polynucleotide complementary to the sequence which is absent in thalassemic subjects.

237. The method of Claim 1 utilized for chromosomal karyotyping which comprises contacting the sample with a series of the compounds of claim 1 which are complementary to a series of known genetic sequences located on chromosomes.

238. The method of Claim 1 wherein the sample is suspected of containing a target polynucleotide which includes a terminal polynucleotide sequence poly A and wherein the compound of claim 1 comprises a modified poly U molecule in which at least one uracil moiety has been modified by chemical addition at the 5' position of Sig.

239. The method of Claim 1 utilized to determine the number of copies of an individual chromosome in a sample.